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REVIEWS AND NOTICES.

LABOR STATISTICS.

Twentieth Annual Report of the Massachusetts Bureau of Statistics of Labor. Horace G. Wadlin, Chief. December, 1889. Boston. Pp. xxv, 694.

A large portion of this Report is taken up with the presentation of the Statistics of Wages. This subject has proved a very attractive one to the state Bureaus, as it has to popular writers, but, as has frequently been pointed out, most if not all former reports have occupied their space with deceitful averages.

Scientific statisticians have often proven that "the general average wage" means absolutely nothing, and the Massachusetts Bureau has done more than any other to correct the fallacies that have arisen.

Part V of the present Report is a suggestion and praiseworthy effort to give truly valuable tables. After criticising the inaccuracy of the general average rate of wages, the compiler presents a series of tables showing for each group of industries the number of persons, male and female, receiving less than \$5 per week, between \$5 and 6, 6 and 7, 7 and 8, 8 and 9, 9 and 10, 10 and 12, 12 and 15, 15 and 20, and over \$20. This is what has been called the classified wages method. The figures are old, being those of the Census of 1885, but the new presentation is very valuable. It would have added to the value of the columns headed "Male" and "Female" if they had been subdivided into "children" and "grown persons"; but this would have greatly increased the work, and some serious difficulties would have been encountered. Great credit is due to the Bureau for what it has done, and for the example it has set. It is understood that Col. Wright, whose advice was sought in this matter, is carrying on a similar investigation in the National Bureau at Washington, and it is to be hoped that others will soon follow and adopt the plan.

Part I, The Relation of Wages to the cost of Production, is also important. It is one of the first presentations of valuable figures on this interesting question, and a method which appears to be reliable has been adopted.

One thousand six hundred and fifteen different manufacturing establishments have been drawn upon to furnish the material, and these were so chosen as to represent all the classified industries of the Commonwealth. In these specified instances the question is asked and answered, What relation does the cost of labor bear to the cost of the product as it lies completed in the manufacturer's hands? The answers give three facts, the percentage of the total cost of production paid (1) in wages, (2) for raw material, and (3) for expenses not specified. These are again divided so as to give figures for a certain specified quantity of the article produced, and also for the whole establishment. The whole is neatly tabulated and given in full.

Tables are given which very well establish the claim of representativeness, and especially is it creditable that the larger and more important industries are the ones most fully reported.

The present results of the investigation are reached in the following conclusions, which are clearly stated and well represented in a table.

| Classification of Wage Cost. | Range. | | Product. | | Persons Employed. | | |
|--|----------|---------|---------------|---------------------------|-------------------|----------|---------|
| | Highest. | Lowest. | Value. | Percentage Represen'd. | Males. | Females. | Total. |
| More than one-half | 77.06 | 51.24 | \$15,991,687 | 2.37 | 14,819 | 1,576 | 16,395 |
| Less than one-fifth | 18.34 | 5.92 | 158,016,950 | 23.42 | 29,441 | 7,864 | 37,305 |
| Between one-third and one-half..... | 49.82 | 33.76 | 163,817,382 | 24.28 | 98,631 | 7,414 | 106,045 |
| Between one-fifth and one-third ... | 33.33 | 20.60 | 313,010,086 | 46.40 | 112,297 | 95,508 | 207,805 |
| Totals..... | 77.06 | 5.92 | \$650,836,105 | 96.47 | 255,188 | 112,362 | 267,550 |

1. In industries, in which the total value of goods made, as shown in the last decennial census, was \$15,991,687, or 2.37 per cent of the aggregate value of goods made in the manufacturing and mechanical industries of the Commonwealth, the wage cost does not fall below one-half of the total cost of production. These are the industries in which the raw material is a crude substance of relatively low cost, as clay, sand, rough stone, etc., or in which a high degree of skill is required, as in watch-making and the like.

2. In industries, in which the total value of the goods made was \$158,016,950, or 23.42 per cent of the aggregate, the average wage cost does not rise above one-fifth of the total cost of production. These

are industries in which the raw material or stock used is itself a manufactured article involving labor in its production, the value of such labor not appearing directly in the particular industry specified, or they are industries in which only a small amount of labor is involved.

3. In industries in which the value of goods made was \$163,817,382, or 24.28 per cent, the wage cost was between one-third and one-half of the cost of production. "These are chiefly industries in which considerable technical skill is expended upon materials or articles of stock which have been previously subjected to industrial processes."

4. Most of the great factory industries are included in the fourth class, which pays from one-fifth to one-third in wages. This class produces goods to the value of \$313,010,086, or 46.40 per cent of the aggregate, and employs 56.53 per cent of all the laborers in the industries under investigation.

There is nothing very remarkable in these conclusions, and their usefulness to science will be secondary, They are certainly in no degree popular, but this is not a fault.

The question now arises, how accurate are they? This Bureau is exceptionally well fitted by experience and in personnel for the collection of such statistics, but unfortunately it fails to tell us its exact methods, and the claim that the results are "thoroughly reliable" is not explained by particulars which it is highly desirable should be known to the public. The figures were of course obtained from the employers. They could not be found except in the books of the establishment. It is important that we should know what steps were taken to secure exact and truthful returns.

Part II contains statistics of Markets, Transportation, Imports and Exports, and Competition. Here again much space is occupied in showing that the returns are representative, and again the proof is reasonably satisfactory. Unfortunately, the figures are almost worthless. The question asked was "Where are the products of this establishment sold *principally*?" The last word vitiates the whole, for everything depends on what view the manufacturer took of it.

Add to this that the answers do not adhere to the intended division into Local, Home, and Foreign markets, but even split up into all sorts of confusing and illogical divisions, and the value of this portion is practically nullified.

Under the head Imports the answers to the question, "Are sales decreased by the importation of foreign-made goods?" are interesting

from a political standpoint, but their value is extremely doubtful, especially when we consider that they were collected in the face of a bitter political struggle. This hardly seems a proper subject for investigation by a state Bureau.

Part III, The Condition of Employees. This subject has been extensively treated by the Bureau in former years, and only portions of it are here noticed, such as Relief Funds, Libraries, Profit-Sharing, Hired Dwellings, Rent and Board, Dwellings owned by Employees. The information presented is derived from voluntary answers by manufacturers, and should be taken *cum grano salis*. It may, however, be considered fully as trustworthy as the letters of laborers which so largely fill some of the state reports; and, so far as it may be true, it is of greater value in proportion as the employer is more intelligent.

Part IV is especially valuable because Massachusetts is our great manufacturing state, and because this Bureau has made a specialty of Statistics of Manufactures. This Part is divided into three subjects:

- (1) The date of establishment of existing firms and corporations.
- (2) The names of founders of existing establishments and the date of the adoption of the present firm name.
- (3) The growth of manufactures.

The information given here is derived from the replies to one of the questions of the schedule used to secure industrial statistics in 1885. Of the firms existing at that time 18 were established prior to 1700, the earliest date mentioned being 1636. Sixty-one per cent have been established since 1861, and 45 years (1841-85) cover the organization of 81.60 per cent of existing establishments. Of course this takes no account of the firms that have had their existence and gone out of business prior to 1885. This part forms a sort of introduction to the annual *Statistics of Manufactures*, published by the Bureau, and will be of great value in the future.

Part VI, Daily Working Time. In this part it is claimed that the returns are complete, covering all the establishments in each industry in operation at the time of the investigation. The tables are arranged on the classification principle employed in Part V, and are therefore not vitiated by false averages. The average enters slightly into the summaries, but does not seriously detract from their value.

The attempts at graphic representation in these two parts are not very successful.

Part VIII, Women in Industry. The Massachusetts Bureau has investigated many phases of this subject, having something about it in almost every report. Women are here considered, first, as partners and stockholders in manufacturing and mechanical industries, and, second, as employees in gainful pursuits in all branches of industry.

It appears from the tables that of the 28,294 partners engaged in manufacturing in the state, 1760, or 6.22 per cent, are women, and of 42,731 stockholders, 11,572, or 27.08 per cent, are women.

That the number of female employees in gainful pursuits has been increasing very rapidly is perfectly evident, but the rate of increase is not so easily determined. The figures here given only go back to 1865, and the differences in classification and in groupings reduce the possibility of comparison to a minimum.

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THE UNITED STATES CENSUS BULLETINS.

No. 6. August 4, 1890. *Financial Condition of Counties.* By T. Campbell-Copeland. Pp. 26.

This inquiry covers the financial condition of 2,728 counties; of these about one-third, or 944, are free from debt. The gross debt of the rest amounts in 1890 to \$145,693,840. The *net* debt and annual interest charges for the several groups of states is as follows:—

| | Net Debt. | Annual Interest Charges. |
|----------------------------|-------------------|--------------------------|
| New England, | \$4,489,613 | \$189,709 |
| Middle, | 21,349,438 | 1,106,128 |
| Southern, | 20,536,734 | 1,408,991 |
| Western, | 66,580,677 | 4,411,553 |
| The Territories, | 2,388,192 | 201,993 |
| | <hr/> 115,344,654 | <hr/> 7,318,374 |

The various financial characteristics of the several groups of states are illustrated by a large number of maps. From the standpoint of clearness it may be questioned whether the symbols chosen are sufficiently simple to be of great advantage in interpreting the data.